

DESCRIPTION

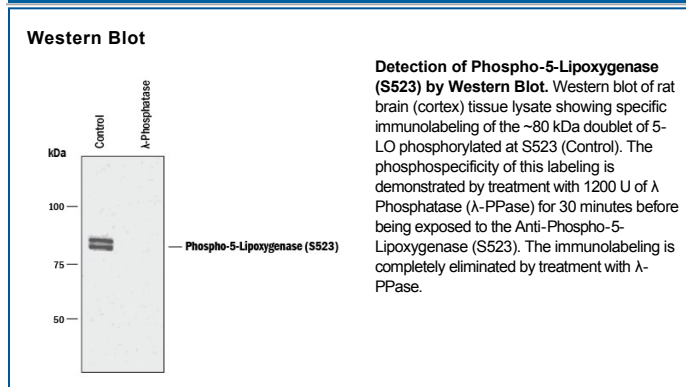
Species Reactivity	Human/Rat/Primate
Specificity	Human and rat 5-Lipoxygenase phosphorylated at S523 in Western blots.
Source	Polyclonal Rabbit IgG
Purification	Antigen Affinity-purified
Immunogen	Phosphopeptide corresponding to amino acid residues surrounding the phospho-S523 of human 5-Lipoxygenase (5-LO)
Formulation	100 µL in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 µg/mL BSA and 50% glycerol. See Certificate of Analysis for details.

APPLICATIONS

Please Note: Optimal dilutions should be determined by each laboratory for each application. *General Protocols* are available in the *Technical Information* section on our website.

	Recommended Concentration	Sample
Western Blot	1:1000 dilution	See Below

DATA



PREPARATION AND STORAGE

Shipping	The product is shipped with polar packs. Upon receipt, store it immediately at the temperature recommended below.
Stability & Storage	For long-term storage, ≤ -20° C is recommended. Product is stable at ≤ -20° C for at least 1 year.

BACKGROUND

5-Lipoxygenase (5-LO) is an 80 kDa, 676 amino acid (aa) nonheme iron dioxygenase. It converts nuclear membrane arachidonic acid into leukotriene A4 (LTA₄) that is then modified to produce either LTB₄ or LTC₄. 5-LO is found in leukocytes and generally exists in the cytoplasm. Upon activation, 5-LO will either remain cytosolic or undergo translocation into the nucleus. In the nucleus, its enzyme products impact gene expression; in the cytosol, its products are secreted and contribute to inflammation. 5-LO has three Nuclear Localization Signal (NLS) motifs starting at amino acids 112, 158, and 518. Upon cell activation, Ser at 523 is phosphorylated by Protein Kinase A (PKA). This amino acid lies within the principal NLS of 5-LO. When phosphorylated, the NLS is inactivated, blocking 5-LO entry into the nucleus. This appears to impact overall leukotriene biosynthesis, and potentially serves as a regulatory mechanism for inflammation.

References:

1. Jones, S.M. *et al.* (2003) *J. Biol. Chem.* **278**:10257.
2. Dixon, R.A. *et al.* (1988) *Proc. Natl. Acad. Sci. USA* **85**:416.
3. Luo, M. *et al.* (2005) *J. Biol. Chem.* **280**:40609.
4. Funk, C. (2001) *Science* **294**:1871.